Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1-8. (canceled)

9. (currently amended) A method for routing packets received at a network device ~~using corresponding data structures into which the received packets are converted~~, the method comprising:

converting the packets into a plurality of data structures;

forwarding, using forwarding logic of the network device, the data structures to a plurality of processing engines of the network device;

processing, by one of the processing engines, a first data structure relating to one of the packets;

halting the processing of the first data structure when first processing information is needed to continue the processing of the first data structure and initiating processing of a second data structure;

halting the processing of the second data structure when either second processing information is needed to continue the processing of the second data structure or the first processing information is obtained by the one processing engine;

monitoring, by a monitor of the network device, ~~respective~~ a processing ~~states~~ state of the ~~plurality of~~ one processing ~~engines~~ engine to identify partial processing results based on the halted processing of the first data ~~structures~~ structure ~~by the processing engines~~ in advance of

[[a]] the identified need for ~~additional~~ the first processing information ~~for continued processing~~ ~~of the data structures~~;

performing, at [[each]] the one processing engine, ~~concurrent~~ a route ~~lookups~~ lookup for ~~at least two of~~ the first data ~~structures~~ structure using the partial processing results ~~for the data~~ ~~structures~~;

modifying, at the one processing ~~engines~~ engine, the first data ~~structures~~ structure based on the route ~~lookups~~ lookup; and

routing, using a switch fabric of the network device, the one ~~packets~~ packet based on the modified data ~~structures~~ structure.

10. (currently amended) The method of claim 9, further comprising:

requesting, by the one processing ~~engines~~ engine, the ~~additional~~ first processing information from one or more agents associated with the one processing ~~engines~~ engine, wherein a prospect of the requesting causes the ~~halted~~ halting of the processing.

11. (currently amended) The method of claim 9, further comprising:

conducting accounting, filtering, or policing functions on the first data ~~structures~~ structure during said performing the route lookup.

12. (currently amended) The method of claim 9, wherein said performing the route lookup includes:

performing, at each processing engine, concurrent route lookups for up to four different data structures.

13-18. (canceled)

19. (currently amended) A system for performing concurrent route lookups for processing a plurality of data items, comprising:

a data processing portion ~~configured to process~~ <u>that processes</u> one <u>of the</u> data ~~item at a time~~ <u>items</u> and ~~to pipeline~~ <u>submits a</u> data ~~requests~~ <u>request</u> to a memory that stores information needed for the processing, ~~to thereby substantially eliminate idle time of~~ <u>wherein the data request halts</u> the [[data]] processing ~~portion associated with discontinuous processing of the one data item due to a request for the stored information~~ <u>of the one data item and initiates the processing of another one of the data items</u>;

a control state portion ~~to monitor~~ <u>that monitors</u> operation of the data processing portion by receiving state information related to a partial <u>processing</u> result produced from the ~~discontinuous~~ <u>halted</u> processing of the one data item by the data processing portion based on a prospective request for the stored information;

a buffer ~~configured to store~~ <u>that stores</u> the partial <u>processing</u> result; and

a controller ~~configured to load~~ <u>that loads</u> the partial <u>processing</u> result from the data processing portion into the buffer and ~~to input another~~ <u>inputs the other</u> data item into the data processing portion for processing while <u>the</u> requested data is obtained for the one data item<u>, wherein the data processing portion resumes the processing of the one data item in an order that differs from an order in which the processing of the one data item was halted</u>.

20. (currently amended) The system of claim 19, further comprising:

an output buffer ~~configured to store~~ that stores a completely processed data item from the data processing portion.

21. (currently amended) The system of claim 19, further comprising:

an input buffer ~~configured to store~~ that stores a plurality of data items to be processed by the data processing portion.

22. (currently amended) The system of claim 19, wherein the data processing portion includes:

a data processor ~~configured to determine~~ that determines a route associated with the one data item; and wherein the control state portion includes:

a state machine ~~configured to interact~~ that interacts with the data processing portion [[and]] to inform the controller when the data processing portion will be requesting data from the memory.

23. (currently amended) A system, comprising:

means for processing data structures ~~to generate routing information~~ and [[for]] requesting information from [[a]] an external source ~~external to the means for processing~~ when the information is projected to be needed to accomplish the processing of the data structures, wherein the requesting suspends a processing of one of the data structures to form partial processing results ~~produced by the suspended processing~~ and initiates a processing of another one of the data structures;

means for monitoring operation of the means for processing via state information

associated with the partial ~~processing~~ results produced by the means for processing;

means for storing the partial ~~processing~~ results from the means for processing at least

until such time as the requested information becomes available to the means for processing; and

means for loading the partial ~~processing~~ results into the means for storing and loading

~~another~~ the other data structure into the means for processing upon the suspension of the

processing of the one data structure, ~~and for~~ loading the partial ~~processing~~ results into the means

for processing after the requested information becomes available, and resuming the processing of

the ~~other~~ one data structure ~~is halted~~.